

WHAT IS CLAIMED IS:

1. A pulse wave detecting apparatus comprising:

a pressure sensor array that has a surface on which plural pressure sensors are disposed, the surface being pressed against an artery of a living human body so that a disposing direction of the pressure sensors intersects with the artery;

a pressurization section pressing the surface of the pressure sensor array against the artery;

a sensor selecting section selecting a candidate of the pressure sensor located above the artery from the pressure sensors in the pressure sensor array pressed by the pressurization section; and

a pulse wave detecting section detecting a pulse wave generated in the artery based on pressure information outputted from the pressure sensor selected by the sensor selecting section in the course where a pressurization force imposed on the pressure sensor array is continuously changed by the pressurization section, wherein

the sensor selecting section includes:

a pressure information acquiring section acquiring pressure information from the respective pressure sensors of the pressure sensor array simultaneously along the time axis; and

a hard member sensor excluding section extracting information on a pressure component caused by a hard member of the living human body different from the artery thereof, from the pressure information of the respective pressure sensors acquired by the pressure information acquiring section to specify

the pressure sensor located above the hard member from the extracted pressure component information and to select the pressure sensors left after the specified pressure sensor is excluded from the plural pressure sensors as candidates of the pressure sensor located above the artery.

2. The pulse wave detecting apparatus according to claim 1, wherein the pressure information is a voltage signal, the pressure component information is the DC component of the voltage signal and

the hard member sensor excluding section extracts the DC component from the voltage signal to specify the pressure sensor located above the hard member based on a level of the extracted DC component.

3. The pulse wave detecting apparatus according to claim 2, wherein the hard member sensor excluding section specifies that the pressure sensor having a DC component at a level exceeding a predetermined level is a pressure sensor with a high possibility of being located above the hard member.

4. The pulse wave detecting apparatus according to claim 2, wherein the hard member sensor excluding section specifies that the pressure sensor with a DC component at the highest level among the plural pressure sensors is located above the hard member.

5. The pulse wave detecting apparatus according to claim 2, wherein the hard member sensor excluding section specifies the pressure sensor located above the hard member based on an inclination of a slope of a waveform obtained by connecting DC component levels of the plural pressure sensors in the disposing

direction thereof.

6. The pulse wave detecting apparatus according to any one of claims 1 to 5, wherein the sensor selecting section further includes an artery position information generating section generating artery position information for selecting the pressure sensor located above the artery from pulse wave amplitude information and the pressure component information included in the pressure information of the respective pressure sensors acquired by the pressure information acquiring section.

7. The pulse wave detecting apparatus according to claim 6, wherein the pulse wave amplitude information is the AC component of a voltage signal, the AC component includes a pulse wave component and an artifact pulse wave and

the artery position information generating section includes an artifact removing section acquiring the pulse wave component left after the artifact pulse wave is removed from the AC component as the artery position information.

8. The pulse wave detecting apparatus according to claim 7, wherein the artifact removing section removes the artifact pulse wave from the AC component using the DC component.

9. The pulse wave detecting apparatus according to claim 8, wherein the artifact removing section removes the artifact pulse wave from the AC component by normalizing the AC component through division of the AC component by the DC component.

10. The pulse wave detecting apparatus according to claim 8, wherein the artifact removing section removes the artifact pulse wave from the AC component by subtracting the DC component

from the AC component.

11. The pulse wave detecting apparatus according to any one of claims 1 to 5, further comprising a hard member position notifying section notifying the position of the hard member relative to the sensor array based on a position in the disposition of the pressure sensor specified as being located above the hard member by the hard member sensor excluding section.

12. The pulse wave detecting apparatus according to claim 11, wherein in the hard member position notifying section, notification is effected using light emitting units provided being related to the pressure sensor array.

13. The pulse wave detecting apparatus according to any one of claims 1 to 5, further comprising an artery position notifying section notifying a position of the artery relative to the pressure sensor array based on the position in the disposition of a candidate of the pressure sensor selected as being located above the artery by the sensor selecting section.

14. The pulse wave detecting apparatus according to claim 13, wherein in the artery position notifying section, notification is effected using light emitting units provided being related to the pressure sensor array.

15. The pulse wave detecting apparatus according to any one of claims 1 to 5, in which the pressure sensor array can be moved by sliding in the disposing direction thereof, further comprising a notification section notifying a sliding direction of the pressure sensor array for detecting a pulse wave based on a position in the disposition of the pressure sensor specified

as being located above the hard member by the hard member sensor excluding section.

16. The pulse wave detecting apparatus according to any one of claims 1 to 5, in which the pressure sensor array can be moved by sliding in the disposing direction thereof, further comprising a notification section notifying a sliding direction of the pressure sensor array for detecting a pulse wave based on a position in the disposition of a candidate of the pressure sensor selected as being located above the artery by the sensor selecting section.

17. The pulse wave detecting apparatus according to any one of claims 1 to 5, in which the pressure sensor array can be moved by sliding in the disposing direction thereof, further comprising a notification section notifying a sliding direction of the pressure sensor array for detecting a pulse wave based on a position in the disposition of the pressure sensor specified as being located above the hard member by the hard member sensor excluding section and a position in the disposition of a candidate of the pressure sensor selected as being located above the artery by the sensor selecting section.

18. The pulse wave detecting apparatus according to claim 17, wherein in the notification section, notification is effected using light emitting units provided being related to the pressure sensor array.

19. A method of detecting a pulse wave detecting a pulse wave generated in the artery of a living human body based on pressure information outputted from a pressure sensor in the course where

a pressurization force imposed on a pressure sensor array, which has a surface on which plural pressure sensors are disposed, the surface being disposed above the artery of the living human body and being pressed against the artery thereof so that a disposing direction of the pressure sensors intersects with the artery, is continuously changed, comprising

a sensor selecting step selecting a candidate of the pressure sensor located above the artery among the pressure sensors of the pressure sensor array, wherein

the sensor selecting step includes:

a pressure information acquiring step of acquiring pressure information from the respective pressure sensors of the pressure sensor array simultaneously along the time axis; and

a hard member sensor excluding step of extracting information on a pressure component caused by a hard member of the living human body different from the artery thereof from pressure information outputted by the respective pressure sensors acquired in the pressure information acquiring step to specify the pressure sensor located above the hard member from the extracted pressure component information and to select the pressure sensors left after the specified pressure sensor is excluded among the plural pressure sensors as candidates of the pressure sensor located above the artery.